



REMARKS

A marked-up version of the amended claims is attached at the end of this amendment. Applicants respectfully request reconsideration and allowance of amended claims 1-12, 17, and 18.

**The current status of the claims**

The instant Amendment A is responsive to the First Office Action dated November 20, 2002. In the Office Action:

Claims 1-10 and 12-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,580,163 issued to Johnson II in view of U.S. Patent No. 3,302,016 issued to Larraburu; and

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson II in view of Larraburu and in further view of U.S. Patent No. 6,414,801 issued to Roller.

**Claims 1-11 patentably distinguish over the cited art**

Claim 1 calls for an LED module, an optical system, and a zoom apparatus that selectively adjusts the relative axial separation of the optical system and the LED module.

Johnson II discloses a ring light, which reduces shadowing by illuminating from multiple angles arranged about the illuminated area. This ring light employs a substantially different focus mechanism which does not involve adjustment of relative axial separation. The focus mechanism of the preferred ring light embodiment of Johnson II, as well as the focus mechanism of the prior art ring light shown in FIGURE 5 of Johnson II, employ a tilting of the individual LED or fiber optical light sources to adjust illumination angle, rather than a relative axial separation adjustment.

The combination proposed by the Examiner mounts a lens such as that shown in Larraburu on the outside housing 18 of the Johnson II ring light. Comparison of FIGURES 2 and 3 of Johnson II shows that the focusing mechanism of Johnson II does not

change relative axial positioning of the LEDs **34** and the outer housing **18**. Rather, the focusing mechanism tilts the LEDs to change the illumination angle of the ring light.

Mounting an additional optical system including lenses on the outside housing **18** does not change this tilt-based mechanism. The relative axial distance of the optical system and the LEDs is not adjusted as the focus adjustment ring **20** of Johnson II is turned. Indeed, adding lenses would be worse than ineffective, it would be positively detrimental, since the tilting of the LEDs relative to the lenses would distort and degrade any preselected axial alignment of the lenses with the LEDs, producing defocusing, blurring, or other problems.

Moreover, Johnson II teaches away from such a combination, because Johnson II already provides a focusing mechanism which is appropriate for a ring light. The focusing is as follows: Johnson II provides for tilting of the LEDs to maintain a selected illumination angle for each LED relative to an illuminated surface as the ring light-to-surface distance changes.

**Claim 4** additionally calls for each lens to be axially aligned with an LED. As discussed above, the focusing mechanism provided with the Johnson II ring light tilts the LEDs. This tilting precludes the axial alignment called for in claim 4.

**Claim 5** additionally calls for the LED module to be arranged on a first sleeve, and the optical system arranged on a second sleeve. Following the Examiner's identifications of the first and second sleeves with the inner and outer housings **10, 18** of Johnson II and the LED module as the LEDs **34-34Q** and flexible mounting **16** of Johnson II, it is apparent that the LED module is suspended between the first and second sleeves. The LED module of Johnson II cannot be said to be mounted on either one or the other of the two sleeves **10, 18**.

**Claim 7**, as amended, additionally calls for a first sleeve having the LED module disposed thereon, and a second sleeve slidingly connected with the first sleeve, the second sleeve

further having the optical system disposed thereon. As noted previously, the LED module of Johnson II straddles the first and second sleeves, and is not disposed on either sleeve.

Applicants also note that in rejecting claim 5, the Examiner appears to assume that the focus adjustment ring 20 rigidly connects with the outer sleeve 18, so that the sleeves 10, 18 move relatively in a screwing fashion. Under this interpretation, the sleeves 10, 18 cannot also be interpreted as being slidingly connected in order to reject Claim 7.

Applicants therefore respectfully submit that claims 1-11, as amended herein, patentably distinguish over the cited references. Accordingly, Applicants urge an early allowance of claims 1-11.

**Claim 12 patentably distinguishes over the cited art**

**Claim 12** as amended calls for a light source including a plurality of LED's rigidly mounted on a first sleeve (the "rigid" mounting being supported in the specification at least at paragraphs [0027] and [0037]), and an adaptive optical system including a plurality of lenses corresponding to the plurality of LED's, in which the adaptive optical system is rigidly mounted on a second sleeve.

Johnson II discloses LEDs that are flexibly, rather than rigidly, mounted. The LEDs are suspended between inner and outer housings 10, 18 on the flexible mount 16, and are not rigidly mounted to either housing. Moreover, Johnson II teaches away from including an adaptive optical system with lenses on one of the sleeves, since Johnson II promotes a different method of focusing (tilting of the LEDs) which is especially designed for the ring light which is the subject of Johnson II.

**Claim 12** further calls for the first and second sleeves to be movably connected by one of an axially sliding connection and a threaded connection, with relative movement of the sleeves producing relative axial movement of the LED module and the

adaptive optical system. In Johnson II, relative axial movement of the housings produces a deformation of the flexible LED mount and tilting of the LEDs, with no appreciable axial movement.

Applicants therefore respectfully submit that claim 12, as amended herein, patentably distinguishes over the cited references. Accordingly, Applicants urge an early allowance of claim 12.

**Claims 17 and 18 patentably distinguish over the cited art**

**Claim 17** as amended calls for a lamp including a plurality of light sources, an optical system including a plurality of lenses in optical communication with the light sources, and a zoom apparatus that selectively adjusts a relative axial separation of the optical system and the light sources.

Johnson II does not disclose a zoom apparatus that selectively adjusts a relative axial separation of an optical system and light sources. Even if lenses are mounted on the outer housing of the Johnson II device as suggested by the Examiner, the Johnson II zoom apparatus tilts, rather than displaces, the LEDs, and cannot adjust a relative axial separation of the proposed lenses and the LED light sources.

Applicants therefore respectfully submit that claim 17 and 18, as amended herein, patentably distinguish over the cited references. Accordingly, Applicants urge an early allowance of claims 17 and 18.



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CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that claims 1-12, 17, and 18 are now in condition for allowance. Notice to that effect is respectfully requested at the earliest possible date.

Respectfully submitted,  
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**MARKED-UP VERSION OF THE AMENDED CLAIMS, SHOWING CHANGES**

1. (once amended) A lamp comprising:  
an LED module including at least one LED arranged on a substrate;  
an optical system [comprising] including at least one lens in optical communication with the LED module; and  
a zoom apparatus that selectively adjusts the relative axial separation of the optical system and the LED module.
  
7. (once amended) The lamp as set forth in claim 1, wherein the zoom apparatus comprises:  
a first [element] sleeve having the LED module disposed thereon; and  
a second [element] sleeve [adapted to] slidably [connect] connected with the first [element] sleeve, the second [element] sleeve further having the optical system disposed thereon.
  
8. (once amended) The lamp as set forth in claim 7, wherein the zoom apparatus further comprises:  
a mechanical interlock between the first and the second [elements] sleeves that prevents relative rotation therebetween.
  
9. (once amended) The lamp as set forth in claim 8, wherein the mechanical interlock comprises:  
a protrusion on one of the first and the second [elements] sleeves, the protrusion being aligned parallel to the optical axis; and  
a groove on one of the first and the second [elements] sleeves that receives the protrusion to prevent relative rotation of the first and the second [elements] sleeves.
  
10. (once amended) The lamp as set forth in claim 7, further comprising:

a stop that relatively biases the first and the second [elements] sleeves into one or more selectable relative axial stop positions.

12. (once amended) A light source comprising:  
an LED module including a plurality of LED's [for generating a lamp beam] rigidly mounted on a first sleeve; and  
an adaptive optical system [for selectively adjusting an angular spread of the lamp beam] including a plurality of lenses corresponding to the plurality of LED's, the adaptive optical system rigidly mounted on a second sleeve;  
the first and second sleeves movably connected by one of an axially sliding connection and a threaded connection, relative movement of the sleeves producing relative axial movement of the LED module and the adaptive optical system.

17. (once amended) A lamp comprising:  
a plurality of light [source] sources;  
an optical system [comprising] including [at least one lens] a plurality of lenses in optical communication with the light [source] sources; and  
a zoom apparatus that selectively adjusts [the] a relative axial separation of the optical system and the light [source] sources.

18. (once amended) The lamp as set forth in claim 17, wherein the zoom apparatus comprises:

one of:

two slidably interconnected sleeves, and  
two threadedly interconnected sleeves,  
the first sleeve having the light [source] sources arranged thereon, and the second sleeve having the optical system arranged thereon.